The 1981 - 1983 West Coast Troll Log Book Project: 5. Data from the 1982 and 1983 Seasons on the Food Habits of Chinook *(Oncorhynchus tshawytscha)* and Coho *(O. kisutch)* Salmon

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THE 1981 - 1983 WEST COAST TROLL LOG BOOK PROJECT: 5. DATA FROM THE 1982 AND 1983 SEASONS ON THE FOOD HABITS OF CHINOOK (*Oncorhynchus tshawytscha*) AND COHO (*O. kisutch*) SALMON

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ABSTRACT

Healey, M. C., B. Riddell, F. P. Jordan, and J. F. T. Morris. 1986. The 1981 - 1983 west coast troll log book project: 5. Data from the 1982 and 1983 seasons on the food habits of chinook (Oncorhynchus tshawytscha) and coho (O. kisutch) salmon. Can. Data Rep. Fish. Aquat. Sci. 591: 936 p.

During the 1981 to 1983 fishing seasons, between 20 and 35 trollers recorded information on daily catch composition and biological parameters of catch in all outside fishing areas off the coast of British Columbia. The first report in this series provides a complete description of the design of the project (Healey et al. 1985a). This report presents the information on the food habits of chinook and coho salmon collected during the 1982 and 1983 seasons.

RESUME

Healey, M. C., B. Riddell, F. P. Jordan, and J. F. T. Morris. 1986. The 1981 - 1983 west coast troll log book project: 5. Data from the 1982 and 1983 seasons on the food habits of chinook (Oncorhynchus tshawytscha) and coho (O. kisutch) salmon. Can. Data Rep. Fish. Aquat. Sci. 591: 936 p.

Pendant les saisons de 1981 à 1983, entre 20 et 35 bateaux de pêche à la traîne ont enregistré des données sur la composition quotidienne des prises et sur les paramètres biologiques des prises dans toutes les pêcheries au large de la côte de la Colombie-Britannique. Le premier rapport de la série fournit une description complète de la conception du projet (Healey et al. 1985a). Le présent rapport expose les données sur les habitudes alimentaires des saumons quinnat et coho qui ont été recueillies pendant les saisons 1982 et 1983.

INTRODUCTION

From 1981-1983 British Columbian trollers provided information on their daily catch of salmon in a log book program administered by the Fisheries Research Branch of the Department of Fisheries and Oceans. Previous reports on the project have dealt with project design and catch statstics (Healey et al. 1985 A, B, C), and size, age, and sex data for chinook and coho salmon (Healey et al. 1986). This report presents the information on food habits of chinook and coho salmon collected during the 1982 and 1983 seasons by participating trollers in the 1981-1983 West Coast Troll Log Book Project. Diet information collected from 1981 is not included because it was recorded using a different format and as a consequence it was not entered into a computer data file.

DESCRIPTION OF DATA COLLECTION

The logbook program had 35 trollers contributing biological information over the 1982 and 1983 seasons -- 12 for both 1982 and 1983, 8 for 1982 only, and 14 for 1983 only. The trollers sampled up to a maximum of 25 chinook and coho a day to collect information on biological parameters including stomach contents.

The trollers recorded stomach contents by first noting whether the stomach of each fish was empty, less than half-full, or more than half-full. They then noted the principal food item in each stomach.

The reader should note that these data are a qualitative assessment of diet, subject to unknown errors in identification by the fishermen. Common and familiar organisms like herring and squid are probably not misidentified, but less common ones may be. Also, since only the principal food in each stomach was recorded, less common diet organisms are under-represented in the data.

THE ARRANGEMENT OF FIGURES AND TABLES

Figure 1 shows the statistical areas within which the catch was recorded.

Table 1 shows the dietary information that was collected from chinook salmon. Each row of the table represents an individual fish. The heirarchy of the information in the table is vessel > year > day > statistical area. The Canadian fishing vessel numbers are concealed to protect the

annonymity of the individual fisherman's data. The vessel numbers that are used in their place have been generated by a vessel numbering system that is the same for all reports in the West Coast Troll Logbook Project series, permitting the cross-referencing of information. The headings "YY", "MM", "DD", and "STAT AREA" mean year, month, day, and statistical area respectively, and the information in these columns describe when and where the fish were caught. Stomach fullness is indicated by an asterisk in the column headed by the letter "E" meaning empty, the column headed by "<1/2" meaning less than half-full, and the column headed by "> 1/2" meaning more than half-full. The principal food item in the stomach of an individual fish at the time it was caught is indicated by an asterisk in one of the "PRINCIPAL FOOD ITEMS" columns such as "HERRING" or "EUPHASIIDS". In the "UNIDENTIFIED + OTHER FISH" column an asterisk indicates the presence of unidentifiable fish remains in the stomach of the fish. The "+ OTHER FISH" component of this heading refers to those fish food items that are rarely reported such as hake, cod, and stickleback. In these instances, the fish food item is spelled out in the column. For some fish, an asterisk is located in one of the "PRINCIPAL FOOD ITEMS" columns and there is no corresponding asterisk in one of the "STOMACH FULLNESS" columns. This simply means that the fisherman omitted checking one of the boxes pertaining to stomach fullness on the logbook record sheet. For still other fish, no asterisks are located in either the "STOMACH FULLNESS" or "PRINCIPAL FOOD ITEMS" columns. This means that no dietary information was collected from these fish. They are still included in the table, however, to enable the cross-referencing of the dietary information from each fish in this report to the other biological information from each fish in report number 4 of this series (Healey et al. 1986).

Table 2 shows the dietary information that was collected from coho salmon. Table 2 is organized in the same way as Table 1 except for the following two minor modifications: (1) The column heading "UNIDENTIFIED + OTHER FISH" in Table 1 is shortened to "UNIDENTIFIED FISH" in Table 2 because no fish food items other than herring, sandlance, anchovy, rockfish, and unidentified fish remains were reported. (2) The column heading "CRAB" in Table 1 is replaced by "SNAIL", which refers to pelagic pteropod molluscs that occasionally were an important food of coho salmon.

Table 1 and Table 2 can be seen on the microfilm enclosed in the envelope accompanying the written report. Hard copies of the tables can be obtained by contacting J. F. T. Morris at the Pacific Biological Station.

ACKNOWLEDGMENTS

Many people contributed to the success of this program. Chief among these were the fishermen who provided us with the data. Also involved in the project were Russ Schmidt, Bob Ball, Ted Carter, Louis Lapi, and various summer students.

OTHER REPORTS IN THIS SERIES

Healey, M. C., B. Riddell, F. P. Jordan, and J. Morris. 1985a. The 1981-1983 west coast troll log book project: 1. Outline of the project and data on catch of chinook (Uncorhnychus tshawytscha) and coho (O. kisutch) salmon. Can. Data Rep. Fish. Aquat. Sci. 546: 145 p.

Healey, M. C., B. Riddell, F. P. Jordan, and J. Morris. 1985b. The 1981-1983 west coast troll log book project: 2. Data on catch of pink (Oncorhynchus gorbuscha) and sockeye (O. nerka) salmon. Can. Data Rep. Fish. Aquat. Sci. 541: 135 p.

Healey, M. C., B. Riddell, F. P. Jordan, and J. Morris. 1985c. The 1981-1983 west coast troll log book project: 3. Data on catch of chum (Uncorhynchus keta) salmon and steelhead (Salmo gairdneri) trout. Can. Data Rep. Fish. Aquat. Sci. 547: 131 p.

Healey, M. C., B. Riddell, F. P. Jordan, and J. F. T. Morris. 1986. The 1981-1983 west coast troll log book project: 4. Biological cata on chinook (Uncorhynchus tshawytscha) and coho (O. kisutch) salmon. Can. Data Rep. Fish. Aquat. Sci. (In press).

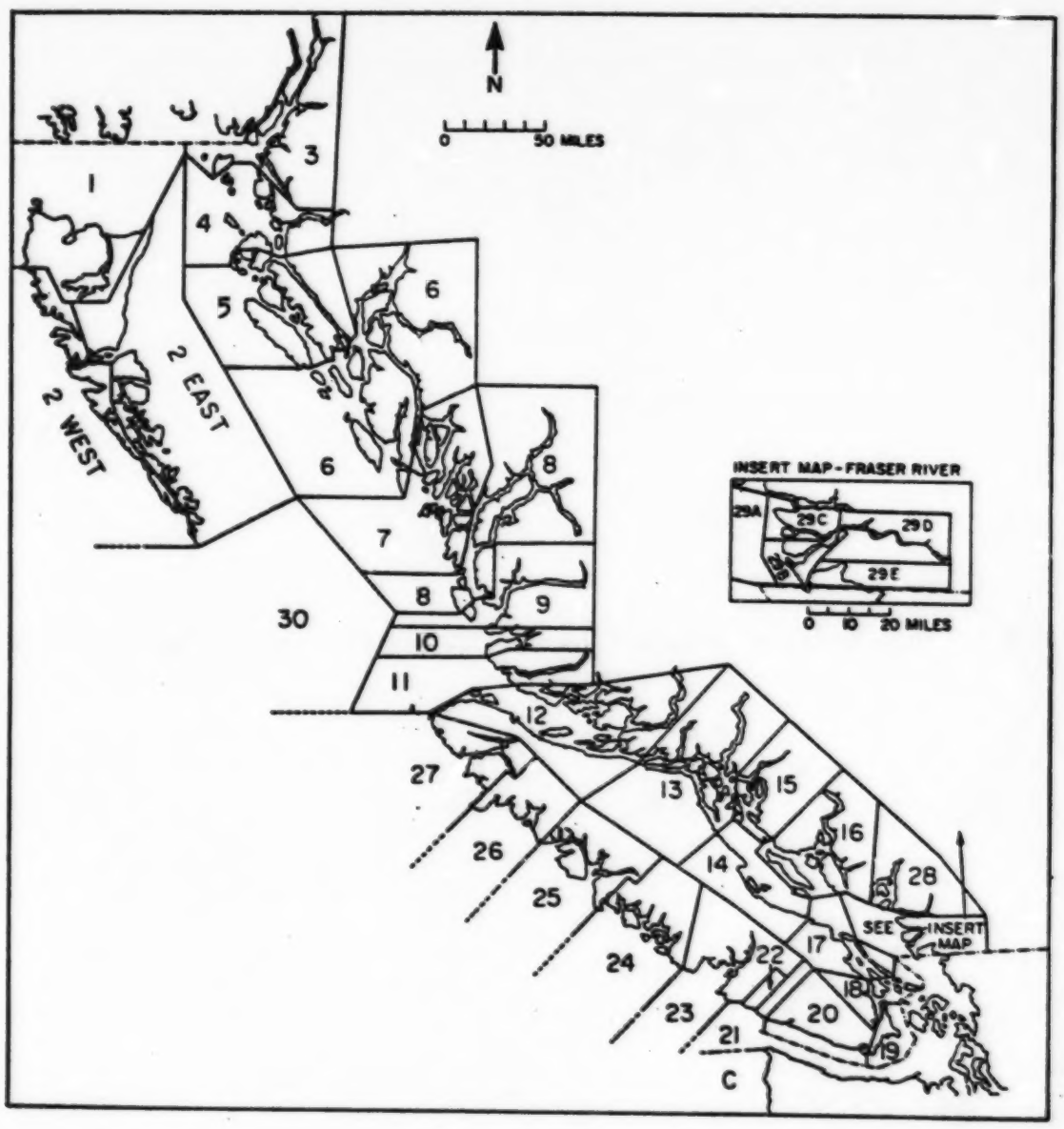

Fig. 1. Map of the British Columbia coast showing the fisheries Statistical Areas.

Table 1. Food habits of chinook salmon: 1982 and 1983 data. (Pages 7-479.)

Tables 1 through 2 do not appear in paper, but do appear in microfiche form at the back of this report.

FOOD HABITS OF CHINOOK SALMON: 1982 AND 1983 DATA

VESSEL	YY	MM	DD	STAT AREA	STOMACH FULLNESS E	STOMACH FULLNESS <1/2	STOMACH FULLNESS >1/2	PRINCIPAL FOOD ITEMS: HERRING	SANDLANCE	ANCHOVY	ROCKFISH	UNIDENTIFIED + OTHER FISH	EUPHAUSIIDS	PLANKTON	SQUID	CRAB
3	83	5	16	4	*											
3	83	5	16	4	*											
3	83	5	16	4	*											
3	83	5	16	4	*											
3	83	5	16	4				*								
3	83	5	16	4	*											
3	83	5	16	4			*	*								
3	83	5	16	4			*	*								
3	83	5	16	4			*	*								
3	83	5	16	4			*	*								
3	83	5	16	4			*	*								
3	83	5	16	4	*											
3	83	5	16	4				*								
3	83	5	16	4		*		*								
3	83	5	16	4			*									
3	83	5	16	4			*	*								
3	83	5	16	4		*		*								
3	83	5	17	4		*		*								
3	83	5	17	4		*		*								
3	83	5	17	4		*		*								
3	83	5	17	4	*											
3	83	5	17	4	*											
3	83	5	17	4		*		*								
3	83	5	17	4	*											
3	83	5	17	4	*											
3	83	5	18	1	*											
3	83	5	18	1		*			*							
3	83	5	18	1	*											
3	83	5	18	1	*											
3	83	5	18	1			*		*							
3	83	5	18	1			*		*							
3	83	5	18	1		*			*							
3	83	5	18	1		*			*							
3	83	5	18	1			*		*							
3	83	5	19	1		*		*								
3	83	5	19	1		*		*								
3	83	5	19	1			*	*								
3	83	5	19	1			*	*								
3	83	5	19	1	*											
3	83	5	19	1			*	*								
3	83	5	19	1		*			*							
3	83	5	19	1		*		*								
3	83	5	19	1	*											
3	83	5	19	1			*	*								
3	83	5	20	1	*											
3	83	5	20	1	*											
3	83	5	21	1	*											
3	83	5	21	1		*		*								
3	83	5	22	1	*											
3	83	5	22	1		*		*								
3	83	5	22	1		*		*								